

Futoshi MIYAMOTO* & Takehisa NAKAMURA*: **Three new hybrids of *Polystichum* from Taiwan**

宮本 太*・中村武久*: 台湾産イノデ属の 3 新雑種

Twenty-eight species of *Polystichum* are recorded in Taiwan at present (S. Daigobo 1972, C. DeVol & C. Kuo 1979). Almost all of them are growing in both warm-temperate and temperate zone, but some of them in alpine zone. Many putative hybrids of *Polystichum* are known in Japan but no record has been reported from Taiwan. During our studies of the specimens collected by the botanical survey teams dispatched from Tokyo University of Agriculture to Taiwan on five occasions, we found the following three new putative hybrids of *Polystichum* in them.

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1) ***Polystichum* × *pseudoparvipinnulum*** Miyamoto et T. Nakamura, hybr. nov. (*Polystichum parvipinnulum* Tagawa × *P. piceopaleaceum* Tagawa).

Ab anteriore differt squamis stipitis atrobrunneis, indusiis margine irregulariter denticulatis, textura laminae coriacea, pinnulis margine spinulosis; a posteriore differt squamis stipitis rhachidisque numerosis, squamis nec nitidis non atrocastaneis, squamis infra pinnulas et costas angusti-lanceolatis et tortuosis.

Hab. Taiwan: Shichia, Taichung Pref. (F. Miyamoto, Aug. 8, 1979, —holotype in Herb. Tokyo Univ. of Agricult.—fig. 1).

This fern was found intermingled with *P. parvipinnulum* and *P. piceopaleaceum* in the secondary forest at the foot of Mt. Silvia (Hsuehshan).

Stipe 40-50 cm long, about 3 mm in diameter, straw-yellow, densely scaly, scales ovate to ovate-lanceolate, 10-16 mm long, 3-6 mm broad, pale brown, center dark brown, margin irregularly denticulate. Lamina lanceolate, subcoriaceous, 60-65 cm long, 20 cm broad at the middle, bipinnate, scales on rachis dense, lanceolate, about 8 mm long, 2 mm broad. Pinnae linear, about 10 cm long, 2 cm broad, scales on costae subdense, twisted, narrow lanceolate or linear,

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Fig. 1. Holotype of *Polystichum* \times *pseudoparvipinnulum*.

sparsely ciliate at the base. Pinnules rhomboid-ovate, base auriculate, margin spinulose. Sori near to costule than to margin. Indusia peltate, margin irregularly denticulate. Spores poorly produced, form irregular.

2) *Polystichum* \times *silviamontanum* Miyamoto et T. Nakamura, hybr. nov.
(*Polystichum piceopaleaceum* Tagawa \times *P. wilsonii* Christ).

Ab anteriore differt squamis stipitis atrobrunneis, laminis rigidioribus supra atroviridibus, pinnulis margine spinulosus; a posteriore differt pinnis inferioribus

gradatim brevioribus, squamis stipitis et rhachidis non nitidis autem rigidis et atro-castaneis.

Hab. Taiwan: Hseuhshan, Taichung Pref. (F. Miyamoto, Aug. 10, 1979—holotype in Herb. Tokyo Univ. of Agricult.—fig. 2); ibid. (A. Ohgoda, Aug. 10, 1979).

This fern was detected mingling with *P. wilsonii* in *Abies kawakamii* forest at altitudes of 3,400 to 3,500 m on Mt. Silvia, while *P. piceopaleaceum* was not able to be found in these areas.



Fig. 2. Holotype of *Polystichum* \times *silviamontanum*.

Fronds tufted. Stipe 15-20 cm long, straw-yellow, densely scaly, scales at the base lanceolate, about 20 mm long, 4 mm broad, substiff, lustrous chestnut-brown, margin pale brown, scales at the middle and upper lanceolate to ovate-lanceolate, 5-12 mm long, 1.5-4 mm broad, pale brown or dark brown in the center, membranous, sparsely ciliate. Laminae lanceolate, 50-55 cm long, about 13 cm broad at the middle, bipinnate, subcoriaceous, dark green, rachis densely scaly, scales 4-9 mm long, 0.6-3 mm broad, pale brown or rarely chestnut-brown in the center, margin sparsely ciliate. Pinnae 5-7 cm long, 1.3-2 cm broad, lower pinnae reduced, scales on costae linear, membranous, pale brown, margin sparsely ciliated. Pinnules obliquely triangular-ovate to elliptic, more or less auriculate, margin spinulose. Sori medial between costule and margin. Indusia round, 0.8-1.0 mm in diameter, margin irregularly denticulate. Almost all sporangia sterile, rarely few irregular spores produced.

3) ***Polystichum* × *gemmilachenense*** Miyamoto et T. Nakamura, hybr. nov. (*Polystichum lachenense* Bedd. × *P. stenophyllum* Christ).

Ab anteriore differt laminis viridioribus, infra apicem gemmiferis, pinnis numerosis, echinatis, pinnis mediis subrhombi-ovatis vel subauriculatis, indusiis minoribus; a posteriore differt basibus stipitum brunneis, laminis pinnatis, pinnis infimis reductis et retrorsis.

Hab. Taiwan: Hseuhshan, Taichung pref. (F. Miyamoto, Aug. 9, 1979—holotype in Herb. Tokyo Univ. of Agricult.—fig. 3).

This fern was growing mingled with *P. lachenense* and *P. stenophyllum* at upper place of temperate zone of Mt. Silvia.

Fronds tufted. Stipe about 10 cm long, lustrous, dark brown, sparsely scaly, scales pale brown, ovate to lanceolate, 6-10 mm long, 1-6 mm broad, margin dentate or ciliate. Laminae coriaceous, green, linear, 18-20 cm long, 2-2.5 cm broad, pinnate to sub-bipinnate, basal pinnae slightly reduced and retrorsed. Rachis straw-yellow, scales linear or linear-lanceolate, 2.5-4 mm long, membranous, pale brown, margin sparsely ciliate, small gemma present below the top of rachis. Pinnae 25-31 pairs, subrhombic-ovate, slightly auriculate, segments serrate and often echinate, under surface clothed with narrow lanceolate scales. Sori near to costa. Indusia peltate, round, about 1.3 mm in diameter, margin irregularly crenate. Sporangia sterile. This fern is also similar to *P. prescottianum* Moore but it is distinguished by a gemma below the top of the rachis.

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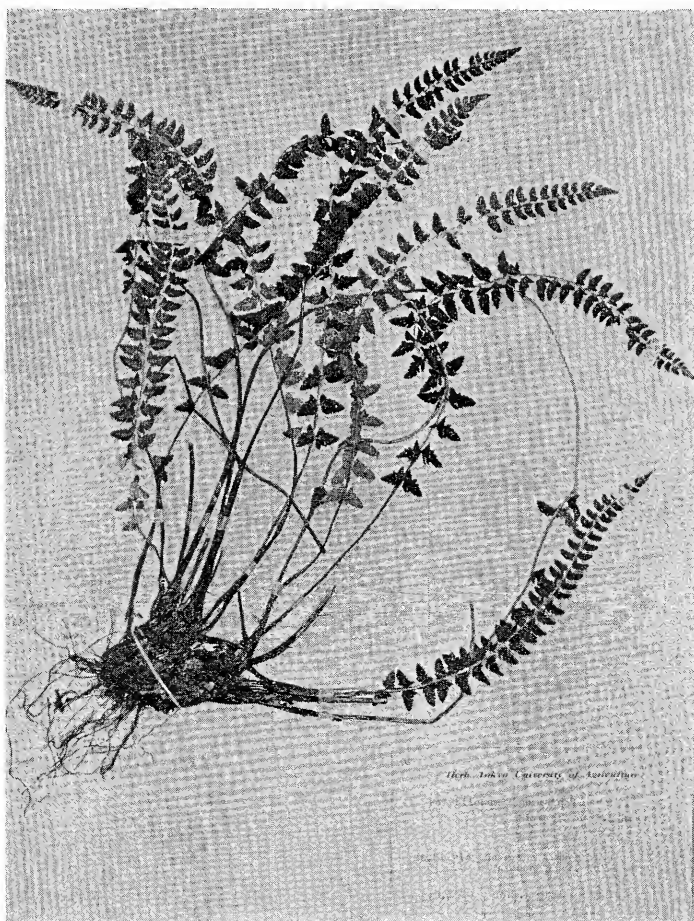


Fig. 3. Holotype of *Polystichum* × *gemma-lachenense*.

台湾に産するイノデ属の種類は、今までに28種（大悟法 1972, DeVoi & Kuo 1979）が記録されている。しかし本属の雑種については、日本で数多くの雑種が報告されているにもかかわらず、台湾ではまだ全くその例が知られていなかった。

過去5回にわたる東京農工大学の台湾植物調査で採集された資料を中心に検討した結果、新雑種と判断したもの3件を発見したので報告する。その3新雑種はつぎの通りである。*Polystichum* × *pseudoparvipinnulum* (タカサゴイノデ × シンイノデ), *P.* × *silviamontanum* (シンイノデ × ナシコイノデ), *P.* × *gemma-lachenense* (タカネシダ × ニイタカシダ)。